

River restoration and soil health in the catchment

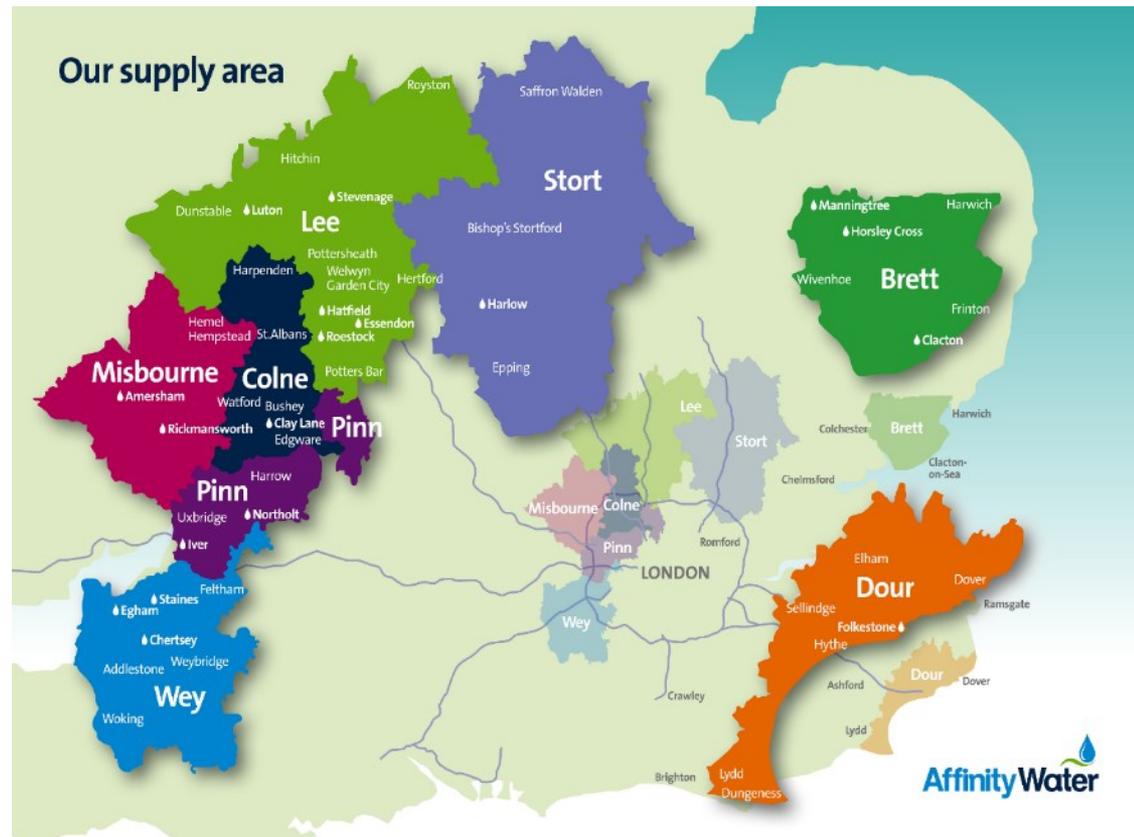
Sophie Mortimer – Senior Asset Scientist and Shaun Dowman – Agricultural Advisor

Affinity Water

Whole Company

We are the largest water-only supplier in the UK and we are committed to delivering a high quality drinking water service to all our customers.

- 900 million litres of water per day
- 1.4 million properties
- 3.6 million people
- 74,000 non-household (commercial) customers



Future challenges- Increased Demand

- We provide water in one of the fastest growing, most economically active regions in the UK.
- We estimate that by 2040, there will be an extra 600,000 people living in 280,000 new homes in our supply area.



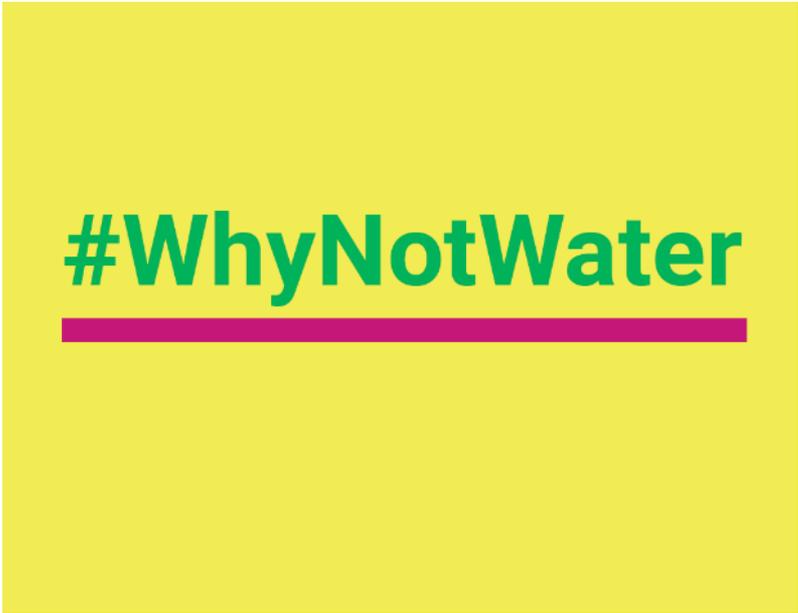
If we do nothing, we face a shortfall of 170 million litres of water each day by 2040

- Leaving more water in the environment by reducing abstraction
 - 42 MI/d by 2020
 - 36 MI/d by 2025.
- 60% of our supply comes from underground sources replenished each year by winter rainfall.
- Less predictable weather patterns associated with climate change could lead to unprecedented drought, if we experience three consecutive dry winters

#WhyNotWater

Manifesto:

- mandatory water efficiency labelling so that consumers are able to make informed choices about the appliances they purchase
- rights for tenants to request that their landlords install water saving measures so that they are able to enjoy water efficient homes
- ensuring fixtures and fittings meet minimum standards through mandatory certification e.g. WRAS or KIWA to avoid wasting water
- every Local Plan in a severely water stressed area should include the target of 110 litres per person per day.

A graphic consisting of a solid yellow rectangular background. In the center, the text "#WhyNotWater" is written in a bold, green, sans-serif font. Below the text is a thick, horizontal magenta bar.

#WhyNotWater

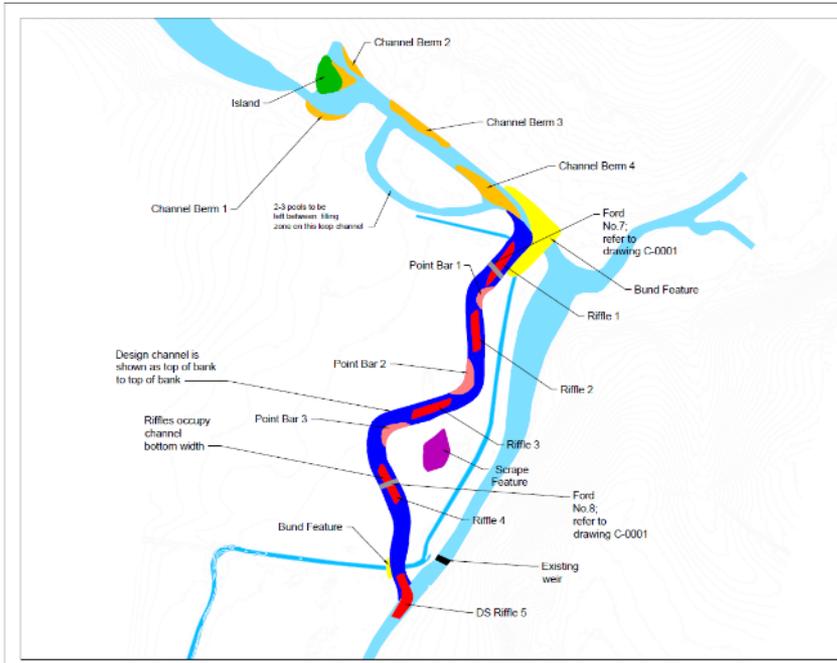
River Restoration

Caring for our environment

- Where rivers are potentially impacted by abstraction of groundwater, in conjunction with reducing our abstraction, we are improving the morphology and connectivity of rivers to make them more resilient to drought and flood
- The Water Framework Directive is a piece of European legislation which sets stringent targets for the ecological quality of watercourses (as well as lakes and coastal waters) across the continent, and has to be achieved by 2027.
- The Revitalising Chalk Rivers partnership has been formed to protect and restore our rare chalk rivers.
- The Environment Agency, Affinity Water and a range of other partners and land owners have been and will work together to improve flows and habitats in order to revitalise rivers and meet the WFD targets by 2027.



River Beane Restoration Project



AECOM

PROJECT
BROADWATER AT WOODHALL ESTATE DESIGN STUDY

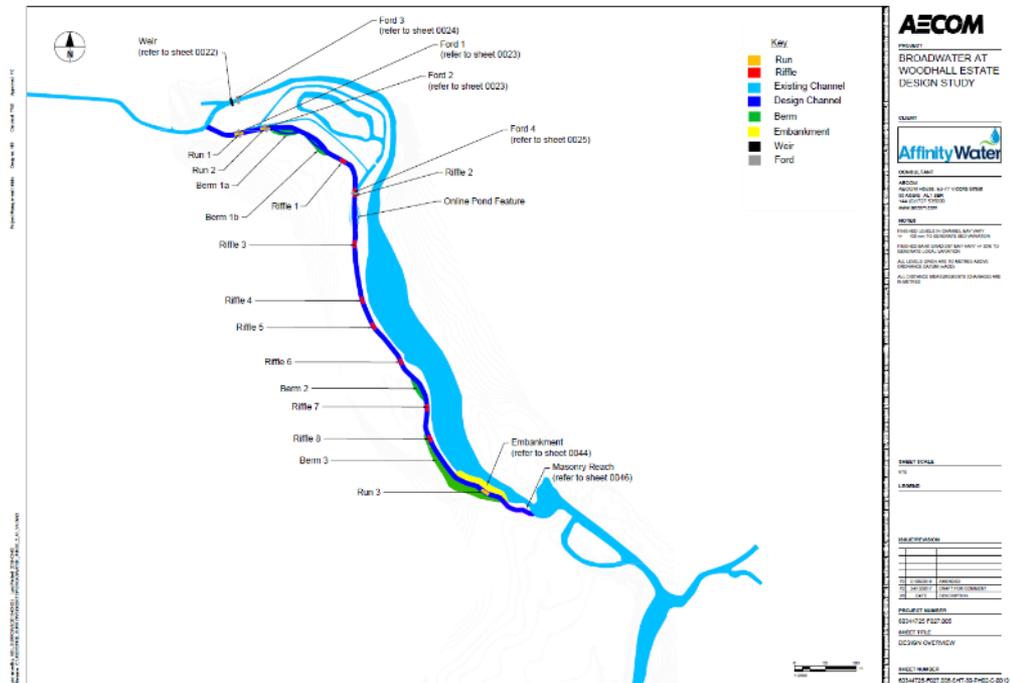
CLIENT

Affinity Water

CONSULTANT

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St Albans
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NOTES



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NOTES
PROJECT SHEETS TO BE CHECKED AND APPROVED BY THE CLIENT AND AECOM BEFORE ANY WORK COMMENCES ON SITE.
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE DESIGN AND SPECIFICATIONS.
ALL DIMENSIONS AND LOCATIONS SHALL BE AS SHOWN ON THE DRAWINGS UNLESS OTHERWISE SPECIFIED.
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SHEET NO. 1/1

DATE

SCALE

REVISIONS

NO.	DESCRIPTION	DATE

DESIGNER

CHECKED

DATE

PROJECT NO.

SHEET NO.

PROJECT TITLE

PROJECT LOCATION

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PROJECT LOCATION

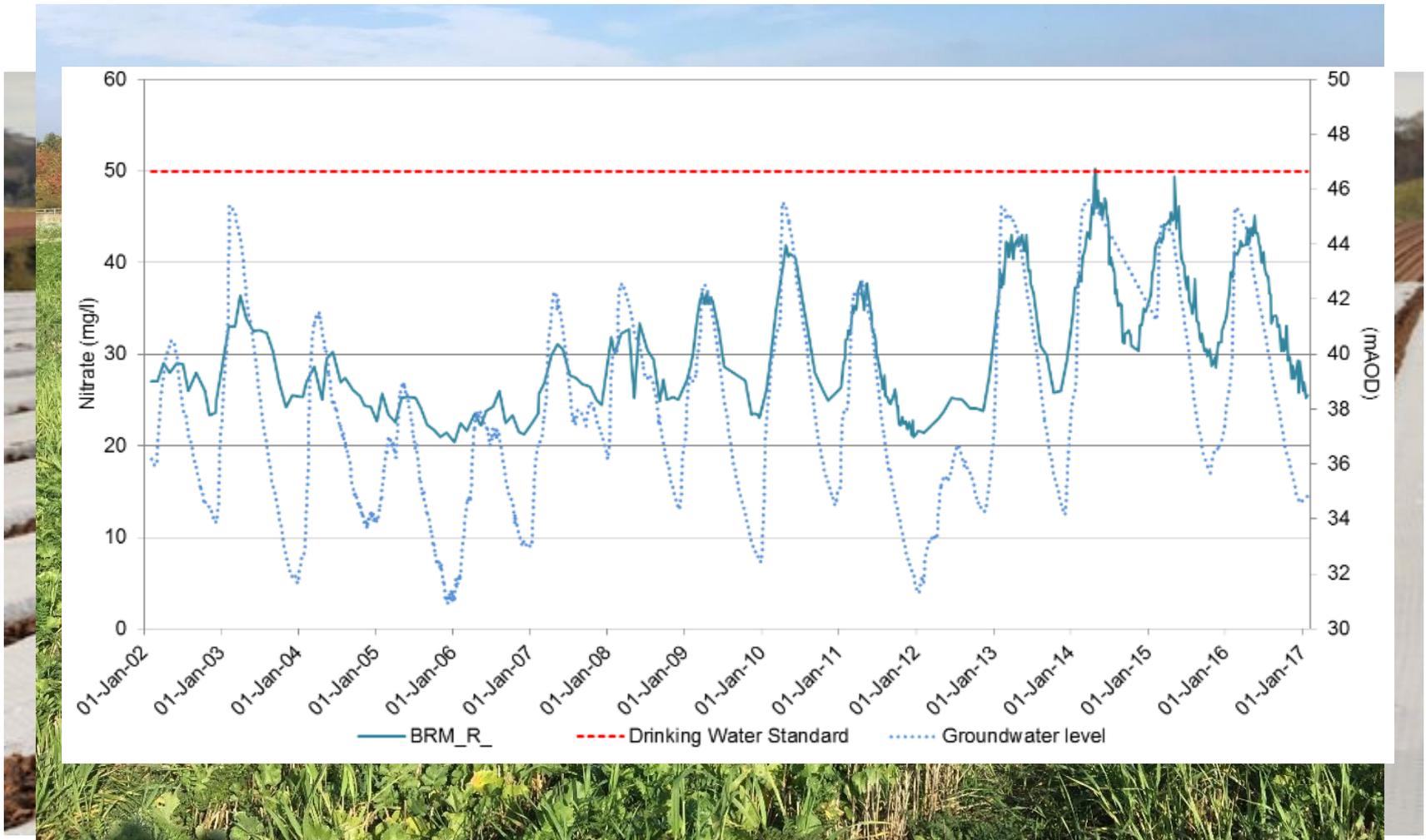


Cover Crops, Soil Health and Water Resources

Shaun Dowman

11th July 2019

Catchment Management: Cover crops



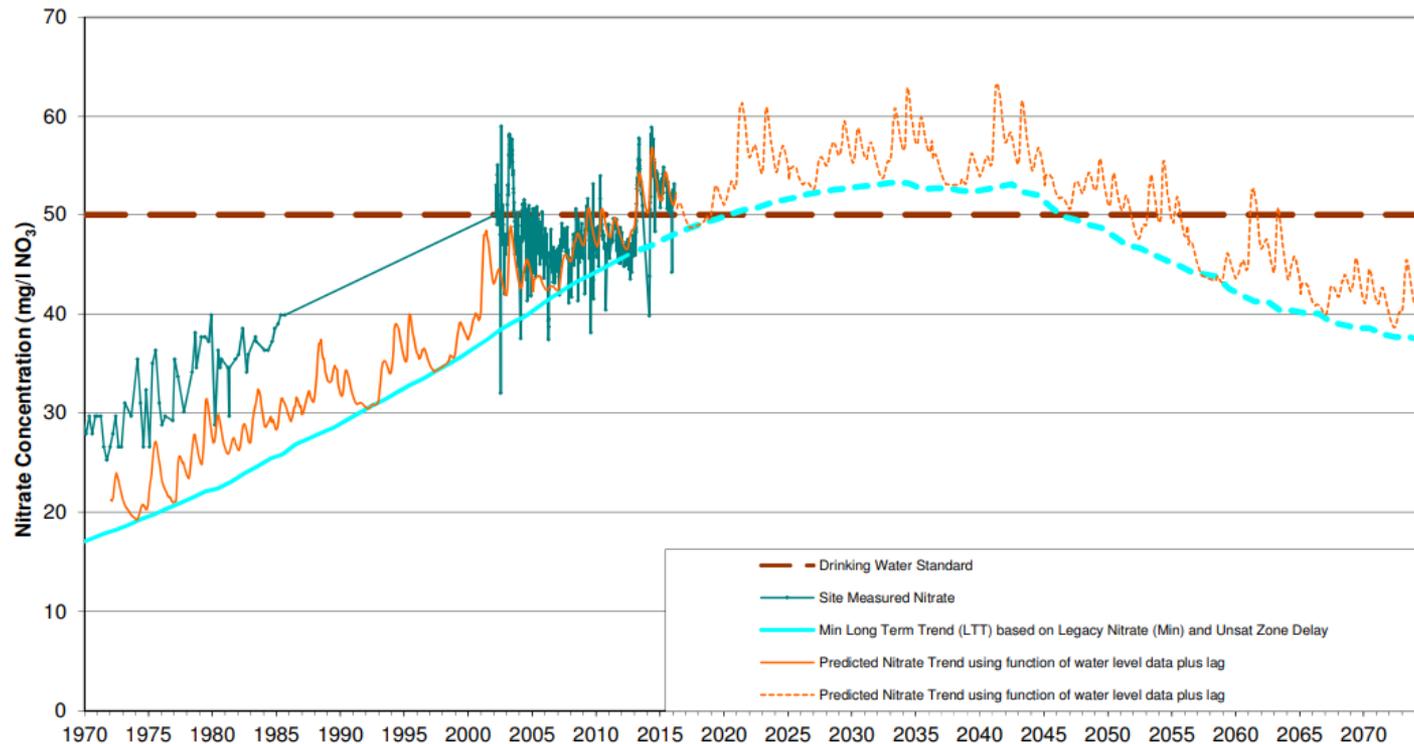
Nitrate leaching



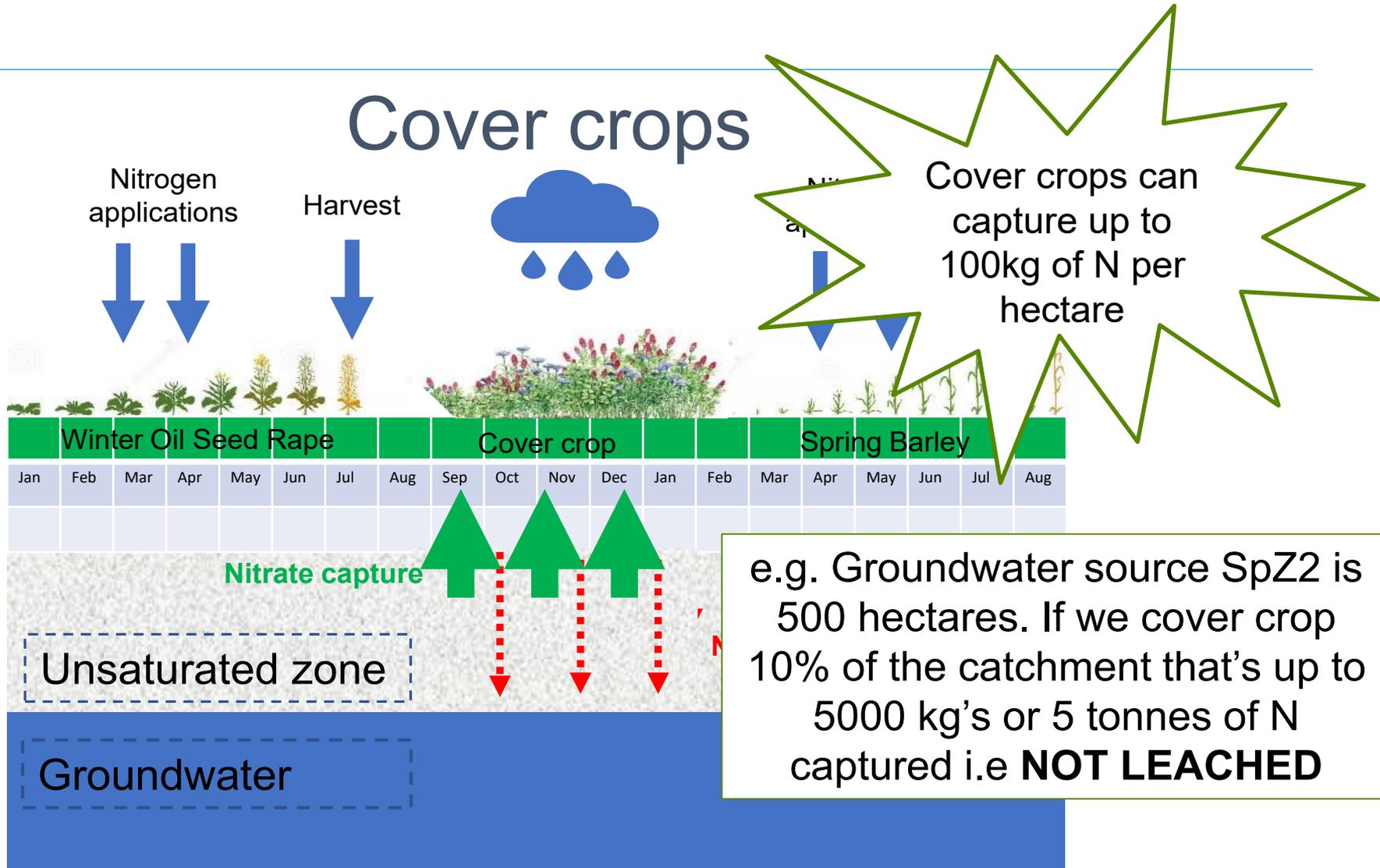
- Increasing levels of nitrate in our groundwater sources
- Historic and recent leaching
- Drinking water standard of 50 mg/l
- Expensive and technically difficult to treat nitrate
- Multiple sources
- Can catchment solutions help us solve the problem?

Nitrate: Now and the future

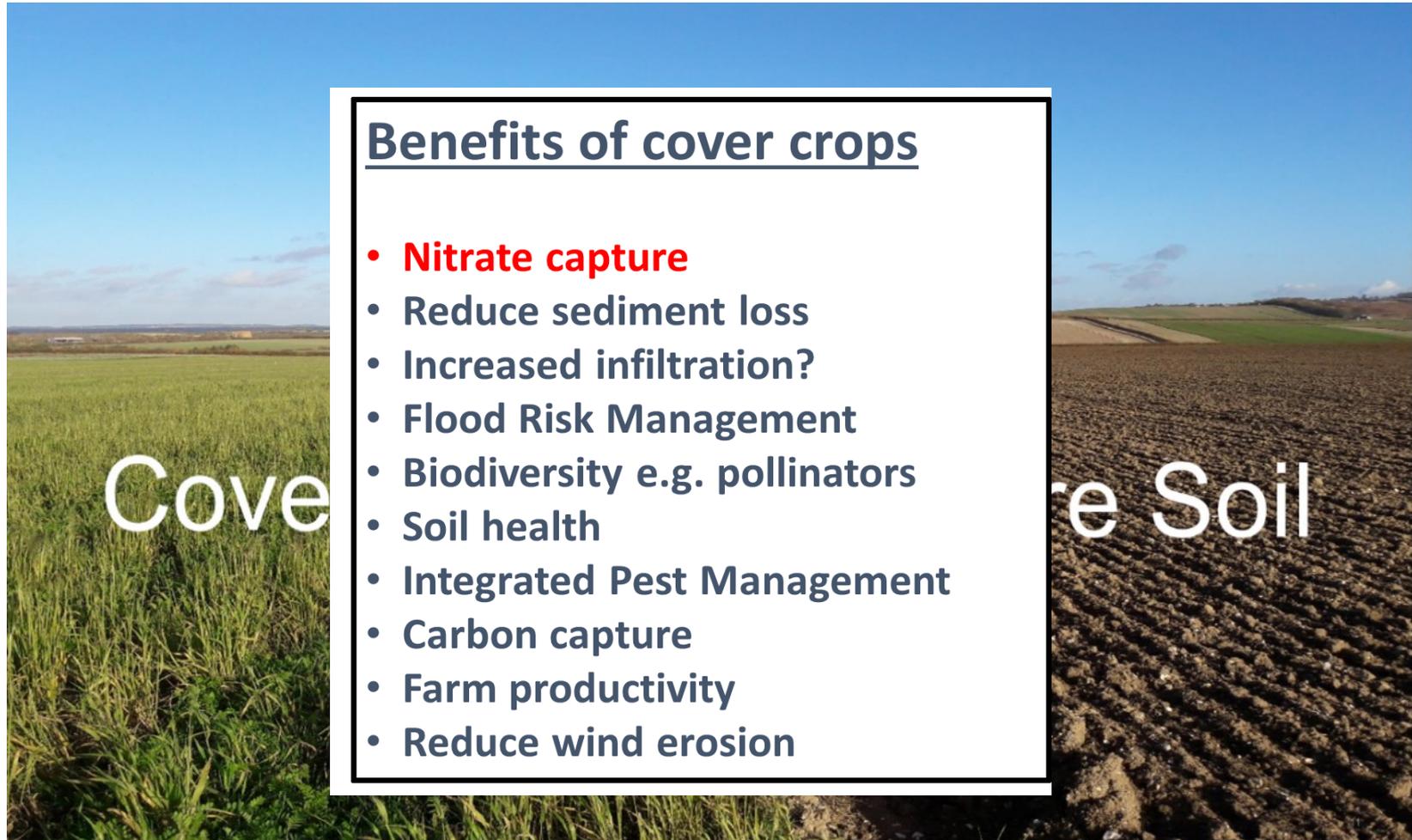
d Forward Prediction of Nitrate at PWS Assuming '50% reduction' Leaching Scenario from 2016



Cover crops capture nitrate



Cover crops



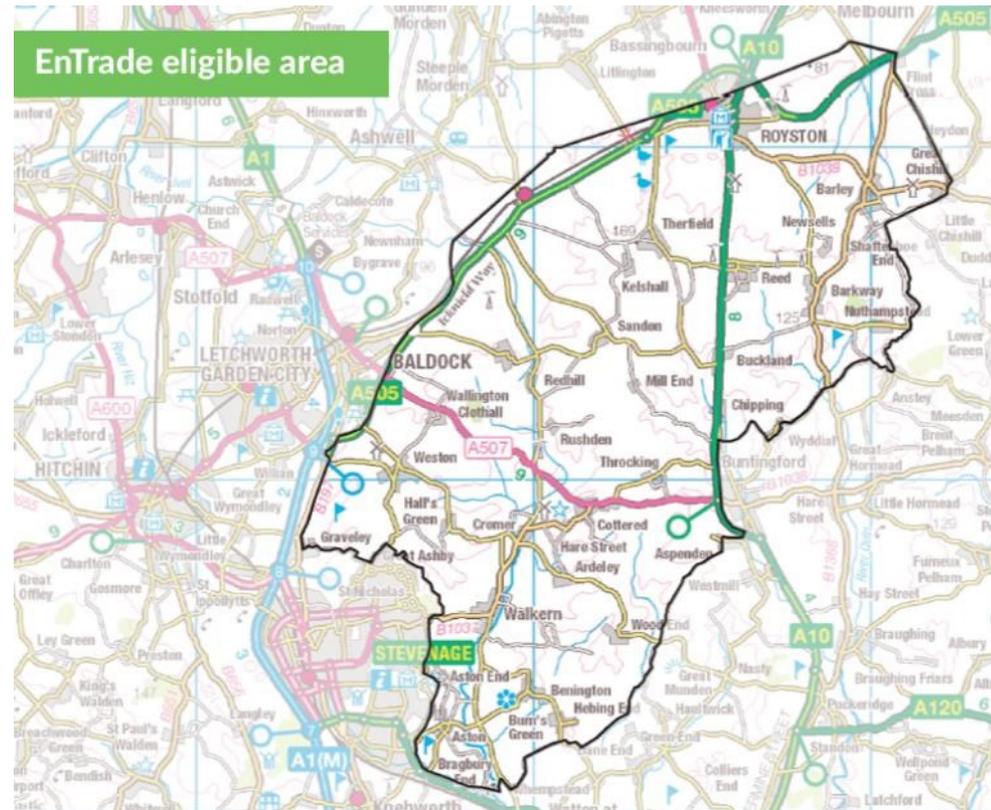
Benefits of cover crops

- **Nitrate capture**
- Reduce sediment loss
- Increased infiltration?
- Flood Risk Management
- Biodiversity e.g. pollinators
- Soil health
- Integrated Pest Management
- Carbon capture
- Farm productivity
- Reduce wind erosion

Cover crops: What are we doing?

EnTrade reverse auction cover crop pilot project

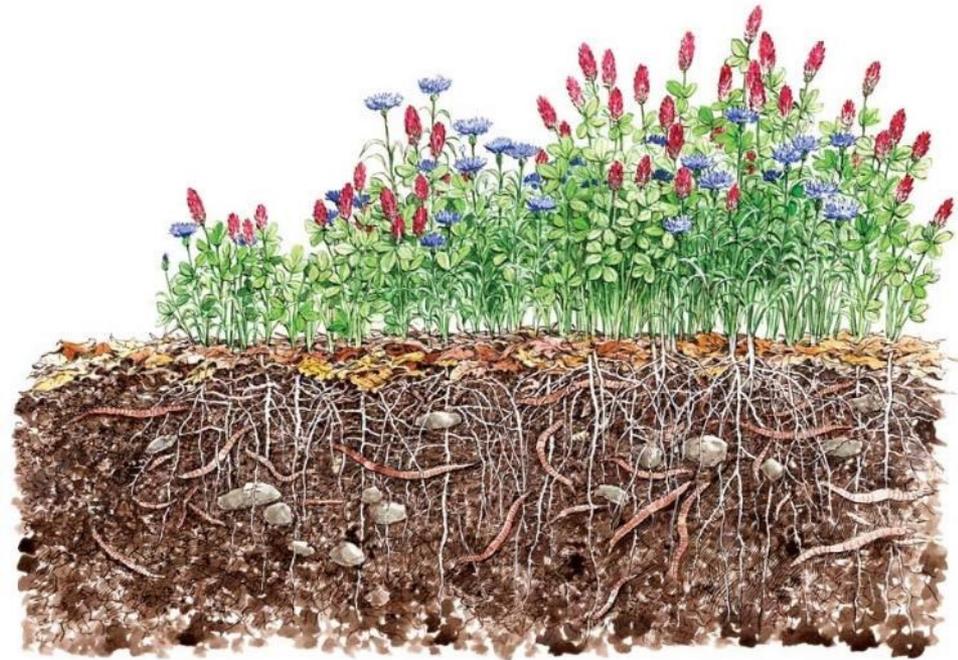
- EnTrade is an on-line platform that operates as a market place for buyers and sellers of ecosystem services
- Collaboration with Cambridge Water
- Over 100 eligible farms
- Target to capture 20 tonnes of N via cover cropping



Cover crops: What are we doing?

EnTrade reverse auction cover crop pilot project: progress so far

- Bids from 15 farms, 11 successful
- Exceeded the target of capturing 20 tonnes of N
- 11 farmers have pledged to grow 500 Ha of cover crops in the catchment
- Average price per hectare £105
- Cover crops to be drilled after harvest (Aug-Sep)



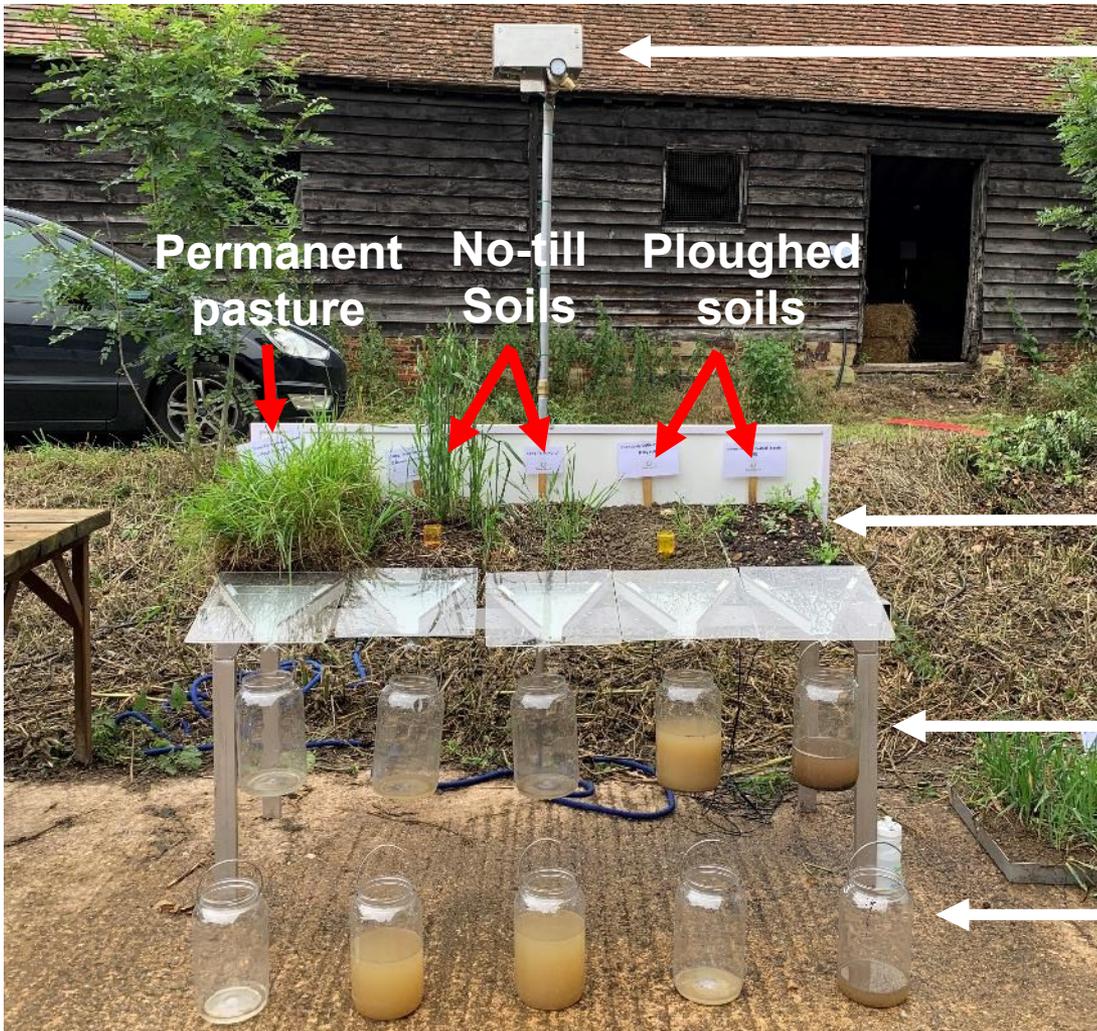
Cover crops: Modelled example



Beyond Cover crops: Soil Health and Conservation Agriculture



Soil Health: Rainfall simulator



Rainfall

Soils

Run-off

Infiltration

AMP7 Plans and beyond: Schemes focussed around soil health for holistic catchment management





**Thank you for
listening.
Any questions?**